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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/560,469	04/28/2000	JOSEPH A FERNANDO	UNF-9058-A	3786
23575	7590	10/31/2005	EXAMINER	
JOSEPH G CURATOLO, ESQ. CURATOLO SIDOTI CO. LPA 24500 CENTER RIDGE ROAD, SUITE 280 CLEVELAND, OH 44145			TRAN, HIEN THI	
			ART UNIT	PAPER NUMBER
			1764	

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/560,469

Applicant(s)

FERNANDO ET AL.

Examiner

Hien Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-13 and 15-46 is/are pending in the application.
- 4a) Of the above claim(s) 28-40,45 and 46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-13,15-27 and 41-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1,2,4-13 and 15-46 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

On page 1, the status of the parent application should be updated.

Appropriate correction is required.
2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claims 1-2, 4-13, 15-27, 41-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, in claim 1, lines 10-12 the newly added limitation is nowhere disclosed in the instant specification.
5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 1-2, 4-13, 15-27, 41-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, lines 10-12 it is unclear as to where the newly added limitation is disclosed in the instant specification.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-2, 4-13, 15-27, 41-44 are rejected under 35 U.S.C. § 103 as being unpatentable over Robinson et al (5,580,532) in view of JP 07-286514 and GB 1,481,133 (Johnson et al).

Robinson et al discloses a device 10 for the treatment of exhaust gas comprising:

a housing 12 and a fragile structure 18 mounted within the housing 12,

a support element 20 disposed between the housing 12 and the fragile structure 18, said support element comprising an integral, non-expanding sheet of ceramic fibers containing alumina and silica, said fibers having an average diameter of 1-10 microns.

The apparatus of Robinson et al is substantially the same as that of the instant claims, but is silent as to whether the fiber may be heat treated to crystalline form as claimed.

However, it appears that the claim is a product-by-process claim and when the patentability of a product-by-process claim is determined, the relevant inquiry is whether the product itself is patentable. *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972). If a product is the same as or would have been obvious to one having ordinary skill in the art from a product of the prior art, the product is unpatentable even though the prior art product was made by different process. *In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985). Since the product of the instant claim is substantial the same as that of Robinson et al, it is unpatentable even though the product of Robinson et al was made by different process.

In any event, JP 07-286514 discloses provision of a ceramic fiber mat disposed between the catalyst and a housing in which the ceramic fibers have been heat treated at temperature of

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1300 °C in 4 hours to produce a crystalline structure having 0-10 % crystallinity as determined by x-ray diffraction. JP 07-286514 is silent as to the specific crystallite size thereof.

However, since in JP 07-286514, the ceramic fiber is heat treated within the temperature range and time as that of the instant claim, the crystallite size of the heat-treated ceramic fibers will be the same as that of the instant claim.

Furthermore, GB 1,481,133 discloses the conventionality of providing ceramic fibers used for thermal insulation in which the ceramic fibers have been heat treated at temperature of 950 to 1050 °C from 10 minutes to one hour to produce a crystalline structure having crystalline size of less than 200 Å.

It would have been obvious to one having ordinary skill in the art to heat the ceramic fibers in the catalytic converter of Robinson et al to form the crystalline structure with the specific percentage of crystallinity as taught by JP 07-286514 and with the specific crystallite size as taught GB 1,481,133, if not inherent in JP 07-286514, since crystalline form of the ceramic fibers provides good resiliency which is required in mounting the ceramic fibers into the catalytic device.

The specific pressure of the support element in the modified apparatus of Robinson et al would be inherent therein. Furthermore, it should be noted that pressure is not a part of the device and therefore is of no patentable moment in apparatus claims.

With respect to the newly added limitation in claim 1, as discussed in the 112 rejection above, the newly added limitation in claim 1 introduces new matter. In any event, the primary reference, Robinson et al, discloses the use of ceramic fibers having alumina/silica ratio within the instant range (col. 5, lines 50-60).

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With respect to claims 41-44, the use of needle punching to hold the ceramic fiber mat is well known in the art as evidenced by JP 07-286514.

Response to Arguments

11. Applicant's arguments filed 8/19/05 have been fully considered but they are not persuasive.

Applicants argue that the US '532 does not disclose the motivation to heat treat ceramic fibers of the support element of the exhaust gas treatment device or use of melted formed fibers in the formation of a support element for an exhaust gas treatment device. Such contention is not persuasive as although US '532 is silent as to whether the ceramic fibers in the support element may be heat treated to crystalline form as claimed, the secondary references are relied upon for such teaching.

Furthermore, it should be noted that the instant claim is a product-by-process claim and when the patentability of a product-by-process claim is determined, the relevant inquiry is whether the product itself is patentable. *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972). If a product is the same as or would have been obvious to one having ordinary skill in the art from a product of the prior art, the product is unpatentable even though the prior art product was made by different process. *In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985). In this case, since the product of the instant claim is substantial the same as that of the US '532 (Robinson et al), it is unpatentable even though the product of Robinson et al may be made by different process.

Applicants argue that the GB '133 does not disclose motivation to utilize heat treated ceramic fibers in the formation of a support element for an exhaust gas treatment device and

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therefore there is no motivation to combine GB '133 with either US '532 or JP '514. Such contention is not persuasive as GB '133 discloses that the ceramic fiber material is useful for thermal insulation for many years (page 1, lines 35-38) and the heat treated ceramic fibers would enhance the desired resiliency for the material which is required for the mounting mat of US '532 (col. 9, lines 23-25).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the US '532 discloses all of the structural limitation of the instant claims, but is silent as to whether the fiber may be heat treated to crystalline form as claimed.

However, it appears that the claim is a product-by-process claim and when the patentability of a product-by-process claim is determined, the relevant inquiry is whether the product itself is patentable. *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972). If a product is the same as or would have been obvious to one having ordinary skill in the art from a product of the prior art, the product is unpatentable even though the prior art product was made by different process. *In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985). Since the product of the instant claim is substantial the same as that of Robinson et al, it is unpatentable even though the product of Robinson et al was made by different process.

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In any event, JP 07-286514 discloses provision of a ceramic fiber mat disposed between the catalyst and a housing in which the ceramic fibers have been heat treated at temperature of 1300 °C in 4 hours to produce a crystalline structure having 0-10 % crystallinity as determined by x-ray diffraction. JP 07-286514 is silent as to the specific crystallite size thereof.

However, since in JP 07-286514, the ceramic fiber is heat treated within the temperature range and time as that of the instant claim, the crystallite size of the heat-treated ceramic fibers will be the same as that of the instant claim.

Furthermore, GB 1,481,133 discloses the conventionality of providing ceramic fibers used for thermal insulation in which the ceramic fibers have been heat treated at temperature of 950 to 1050 °C from 10 minutes to one hour to produce a crystalline structure having crystalline size of less than 200 Å.

It would have been obvious to one having ordinary skill in the art to heat the ceramic fibers in the catalytic converter of Robinson et al to form the crystalline structure with the specific percentage of crystallinity as taught by JP 07-286514 and with the specific crystallite size as taught GB 1,481,133, if not inherent in JP 07-286514, since crystalline form of the ceramic fibers provides good resiliency which is required in mounting the ceramic fibers into the catalytic device.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the

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applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicants argue that GB '133 does not disclose motivation for a mat of heat-treated ceramic fibers possessing crystallinity, crystallite size or holding force performance capabilities. Such contention is not persuasive as GB '133 discloses the conventionality of providing ceramic fibers used for thermal insulation in which the ceramic fibers have been heat treated at temperature of 950 to 1050 °C from 10 minutes to one hour to produce a crystalline structure having crystalline size of less than 200 Å.

With respect to the specific crystallinity, as set forth above, the JP '514 is relied upon for such teaching. With respect to the specific pressure of the support element in the modified apparatus of Robinson et al would be inherent therein. Furthermore, it should be noted that pressure is not a part of the device and therefore is of no patentable moment in apparatus claims.

Applicants argue that the JP '514 is strictly limited to fiber compositions having ratio of alumina/silica of 70:30 - 74:26 and therefore teaches away from the use of the fiber compositions outside of the range. Such contention is not persuasive as the primary reference, US '532 is relied upon for such teaching.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Monday-Friday from 9:30AM-6:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1454. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HT
October 27, 2005

Hien Tran

Hien Tran
Primary Examiner
Art Unit 1764